

## APPENDIX B – SENSITIVITY ANALYSIS TABLE

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### INTRODUCTION

The sensitivity analysis estimates the impact on income, expenses and the net result from transactions associated with variations to forecasts of selected economic and financial variables. The major variables that affect Victoria's net result from transactions are economic growth, employment, consumer prices, wages, enterprise bargaining agreements, domestic and overseas share prices, property prices and volumes and interest rates.

To assess sensitivity to change, the level of the economic variable in each case is assumed to be one per cent higher than expected in the budget year, before continuing to grow at the previously forecast rate. For interest rates, the assumption is that they are one percentage point higher than assumed in the budget year and remain one percentage point above the budget assumptions in subsequent years.

It is assumed during the analysis of each variable that all other variables follow their forecast growth. As such, the analysis captures the effect of changing only one variable at a time, and does not allow for the likelihood that other variables would also change. For example, an increase in consumer prices could be expected to affect interest rates, wage claims and other economic variables.

The sensitivity analysis in Table B.1 presents the sensitivity of both the net result from transactions and the net result to selected economic and financial indicators.

**Table B.1: Impact on the general government fiscal results of selected economic indicators being one per cent higher than expected in 2009-10<sup>(a) (b) (c)</sup>**

(\$ million)

	2009-10 Estimate	2010-11 Estimate	2011-12 Estimate	2012-13 Estimate
<b>Gross state product</b>				
Income from transactions	130	138	146	153
Expenses from transactions	5	-2	-9	-16
<b>Net result from transactions</b>	<b>124</b>	<b>139</b>	<b>155</b>	<b>169</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>124</b>	<b>139</b>	<b>155</b>	<b>169</b>
<b>Employment</b>				
Income from transactions	46	48	50	53
Expenses from transactions	-1	-4	-7	-9
<b>Net result from transactions</b>	<b>47</b>	<b>52</b>	<b>57</b>	<b>62</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>47</b>	<b>52</b>	<b>57</b>	<b>62</b>
<b>Consumer prices<sup>(d)</sup></b>				
Income from transactions	250	253	261	270
Expenses from transactions	98	93	86	80
<b>Net result from transactions</b>	<b>152</b>	<b>160</b>	<b>175</b>	<b>190</b>
Other economic flows	-161	..	..	..
<b>Net result</b>	<b>-8</b>	<b>161</b>	<b>176</b>	<b>191</b>
<b>Average weekly earnings</b>				
Income from transactions	51	53	56	59
Expenses from transactions	5	2	..	-3
<b>Net result from transactions</b>	<b>46</b>	<b>51</b>	<b>56</b>	<b>61</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>46</b>	<b>51</b>	<b>56</b>	<b>61</b>
<b>Enterprise bargaining agreements<sup>(e)</sup></b>				
Income from transactions	22	22	23	23
Expenses from transactions	163	204	221	237
<b>Net result from transactions</b>	<b>-141</b>	<b>-182</b>	<b>-198</b>	<b>-214</b>
Other economic flows	-242	..	..	..
<b>Net result</b>	<b>-383</b>	<b>-182</b>	<b>-198</b>	<b>-214</b>
<b>Domestic share prices</b>				
Income from transactions	..	..	..	..
Expenses from transactions	..	-3	-3	-3
<b>Net result from transactions</b>	<b>..</b>	<b>3</b>	<b>3</b>	<b>3</b>
Other economic flows	35	..	..	..
<b>Net result</b>	<b>35</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>Overseas share prices</b>				
Income from transactions	..	..	..	..
Expenses from transactions	..	-3	-3	-3
<b>Net result from transactions</b>	<b>..</b>	<b>3</b>	<b>3</b>	<b>3</b>
Other economic flows	34	..	..	..
<b>Net result</b>	<b>34</b>	<b>3</b>	<b>3</b>	<b>3</b>

**Table B.1: Impact on the general government fiscal results of selected economic indicators being one per cent higher than expected in 2009-10 (continued)<sup>(a) (b) (c)</sup>**

(\$ million)

	2009-10 Estimate	2010-11 Estimate	2011-12 Estimate	2012-13 Estimate
<b>Property prices</b>				
Income from transactions	42	65	66	67
Expenses from transactions	-1	-6	-9	-13
<b>Net result from transactions</b>	<b>43</b>	<b>71</b>	<b>75</b>	<b>80</b>
Other economic flows	16	..	..	..
<b>Net result</b>	<b>60</b>	<b>72</b>	<b>77</b>	<b>81</b>
<b>Property volumes</b>				
Income from transactions	33	37	37	38
Expenses from transactions	-1	-3	-5	-7
<b>Net result from transactions</b>	<b>34</b>	<b>40</b>	<b>42</b>	<b>45</b>
Other economic flows	..	..	..	..
<b>Net result</b>	<b>34</b>	<b>40</b>	<b>42</b>	<b>45</b>
<b>Interest rates<sup>(d)</sup></b>				
Income from transactions	21	37	35	35
Expenses from transactions	23	159	194	228
<b>Net result from transactions</b>	<b>-2</b>	<b>-122</b>	<b>-159</b>	<b>-192</b>
Other economic flows	4293	..	..	..
<b>Net result</b>	<b>4291</b>	<b>-122</b>	<b>-159</b>	<b>-192</b>

Source: Department of Treasury and Finance

Notes:

- (a) A positive number for income from transactions denotes an increase in revenue. A positive number for expenses from transactions denotes an increase in expenses (and hence a reduction in the net result from transactions and net result). A positive number for other economic flows represents an increase in revenue. A positive number for the net result from transactions and net result denotes a higher surplus or lower deficit. Numbers may not balance due to rounding.
- (b) The sensitivity from a 1 per cent lower-than-expected outcome of an economic variable would, in most instances, simply be the opposite of the impact shown in the table. However, for some results, the impacts of changes are not symmetrical and therefore care should be exercised when using the table to estimate the impact of lower-than-expected economic variables.
- (c) Only reasonably quantifiable data has been included in the analysis.
- (d) Reflecting the Government's departmental funding arrangements, it is assumed that an increase in consumer prices within the budget year does not impact on employee entitlements.
- (e) Represents a 1 per cent increase in all government enterprise bargaining agreements.
- (f) Assumes a one percentage point increase across the entire term structure, i.e. short and long rates, over the forward estimates period.

### **Sensitivity to economic growth**

Higher-than-expected gross state product leads to higher revenue, principally from goods and services tax (GST) grant revenue and taxation revenue from related consumption taxes. This also leads to increased sales of goods and services leading to an increase in expenses. However, over time, a decrease in interest costs results in a decline in expenses. This increases both the net result from transaction and the net result.

### **Sensitivity to employment**

Higher-than-expected employment is assumed to result in additional payroll tax revenue, and would increase both the net result from transactions and the net result.

### **Sensitivity to consumer prices**

Higher consumer prices are assumed to lead to higher Commonwealth-sourced revenue and revenue from sales of goods and services (reflecting indexation and changes in other charges), as well as higher GST and taxation revenue as the value of tax bases rises in nominal terms. However, the higher revenue is partly offset by the higher cost of supplies and services, and some increases in outlays on grants and transfers. Reflecting the operation of the Government's departmental funding arrangements, the increase in expenses is limited to the extent that departments can fund it from increased revenue from specific purpose grants and sales of goods and services.

The increase in consumer prices would also result in an immediate increase in the superannuation liability which would adversely affect the net result by way of an actuarial loss. In subsequent years the now higher superannuation liability also increases the superannuation expense slightly. Overall, there is a positive impact on the net result from transactions.

### **Sensitivity to average weekly earnings**

A rise in the level of economy-wide wages would result in higher payroll tax revenue, contributing to an increase in the net result from transactions and net result. As with the sensitivity to consumer prices, where there is an increase in Commonwealth-sourced revenue (due to indexation arrangements), there is a proportional increase in expenses. The Government's enterprise bargaining agreements are assumed to be unchanged over the projection period.

### **Sensitivity to enterprise bargaining agreements**

Enterprise bargaining agreements have the potential to pose a substantial risk to Victoria's budget position. The Government's public sector wages funding policy seeks to maintain the real value of wages and seeks productivity offsets for higher wage outcomes to minimise the risk to the budget. An across-the-board rise in the Government's enterprise bargaining agreements in excess of the level set out in its wages policy would result in an increase in employee entitlements and a corresponding decline in the net result from transactions. This is only partially offset by increased revenue from indexation arrangements and user charges (which are based on the cost of providing services).

The increased employee entitlements would increase the value of the superannuation liability and result in an actuarial loss, thereby reducing the net result for the budget year. The higher superannuation liability would flow through to an increase in the superannuation expense in the remaining out-years.

### **Sensitivity to domestic and overseas share prices**

The State's public financial corporations (PFCs) and superannuation funds have holdings of domestic and international shares as part of their respective investment portfolios. In relation to the PFCs, higher domestic and international share prices therefore raise the profits (or reduce losses) and so the associated income tax equivalents (ITEs) from PFCs generally rise. However, in the current environment, where there have been substantial decreases in share and other asset prices, accumulated carry forward tax losses mean there will be little or no impact.

Higher share prices also reduce the value of the superannuation liability due to the increase in superannuation fund assets. Furthermore, the higher than expected level of superannuation fund assets also reduces the superannuation expense beyond the budget year, thereby improving the net result from transactions in forward years.

### **Sensitivity to property prices**

Higher property prices have an immediate impact on the net result from transactions through increased collections of stamp duty on land transfer revenue. At the same time, the value of the superannuation liability decreases (due to the increased value of holdings of property in the investment portfolio of superannuation funds) which gives rise to an actuarial gain thereby increasing the net result. In later years, the higher property prices continue to be reflected in higher stamp duty on land transfer and land tax revenues, while the previous increase in superannuation assets reduces ongoing superannuation expenses, all of which increase the net result from transactions.

### **Sensitivity to property volumes**

Higher property transaction volumes would increase stamp duty on land transfer revenue leading to a rise in the net result from transactions and net result.

### **Sensitivity to interest rates**

A one percentage point increase in interest rates is assumed to occur equally across the entire term structure. The increase in interest rates reduces the valuation of long-term liabilities of the PFCs and, where this raises measured profits of these entities for distribution to the general government sector through ITEs, there will be an increase in revenue. This is partly offset by lower public non-financial corporation dividends and ITEs due to higher borrowing costs, as well as an increase in the borrowing costs of the general government sector.

At the same time, the increase in interest rates reduces the value of the superannuation liability, giving rise to an actuarial gain. In terms of ongoing superannuation expenses, the impact of a higher discount rate on service costs is more than offset by an increase in the annual interest expense on the superannuation liability going forward, leading to an increase in the superannuation expense. Accordingly, both the net result from transactions and the net result fall by the end of the forward estimates.